Summary of Report from the 1st Meeting of the Light Sources Directorate Science Advisory Committee (SAC)

August 12-13, 2010

Summary

The Brookhaven National Laboratory (BNL) Light Source Directorate SAC (hereafter referred to simply as SAC) was chartered by the Light Source Directorate of the BNL. The SAC is charged with providing recommendations on all scientific and policy issues that bear on the full and effective utilization of the BNL Light Sources Directorate (LSD) facilities and on future developments required to maintain the scientific productivity of the BNL Light Sources Directorate programs. The first meeting of the full SAC was held at BNL on August 12-13, 2010.

Advice on the strategic planning and scientific program for the light sources at BNL, especially in the context of the very rapidly progressing NSLS-II construction and its becoming operational in 2014, will help assure both that the highest quality scientific program evolves rapidly on NSLS-II and that the existing vibrant user community on NSLS is well accommodated in this transition. SAC made several observations and recommendations to LS management relevant to integrated planning for NSLS and NSLS-II.

One of the principal topics on the agenda of the first SAC meeting was the review of 54 beamline development proposals, which had been solicited and received from the scientific user community by NSLS-II management earlier in the summer. It was recognized that effective peer review of such a large number of proposals required a process that augmented the expertise of the SAC members and hence a series of 7 Study Panels were formed, each having two SAC members (one who also served as chairperson). The assessments and rankings from these study panels were made available to SAC in advance of its August 12-13 meeting and informed its deliberations and recommendations. NSLS-II management also requested input from SAC on the draft user policy and on the allocation of contingency that will likely be available in the construction budget for NSLS-II.

At its meeting on August 12-13, SAC heard talks from Light Source Directorate management that provided context for the discussions and recommendations. The meeting agenda is included with this Summary (below). Following questions and extensive discussion, SAC met in closed session and collectively formulated its observations, conclusions and recommendations, developing a summary power point presentation for the closeout with BNL LSD management. SAC reached unanimous agreement on the material presented in this closeout to the management of LSD management and NSLS and NSLS-II senior staff held on Friday, August 13. This closeout summary was the basis from which final recommendations were made to LS management.

SAC's findings and recommendations were organized by each of the requested topics identified by BNL LSD management (this list is also included with this Summary). SAC provided specific advice on the beam line development plan and also on a number of important items that did not explicitly fit within this context, but on which SAC felt it was important to comment and make recommendations.

Appendix

1. List of SAC members

2. Agenda of the SAC Meeting – August 12-13, 2010

3. List of Topics provided to SAC by LSD Management

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1. List of the Members of the LS SAC Committee

- Keith Hodgson, SLAC National Accelerator Laboratory (Chairperson)
- Simon Bare, UOP
- Murray Gibson, Advanced Photon Source at Argonne National Laboratory
- Ernie Hall, General Electric Global Research
- Jerry Hastings, SLAC National Accelerator Laboratory
- Russell Hemley, Carnegie Institution of Washington
- John Hemminger, University of California, Irvine
- Leemor Joshua-Tor, Cold Spring Harbor Laboratory
- Steve Kevan, University of Oregon
- Sine Larsen, University of Copenhagen
- Antonio Lanzirotti, University of Chicago (UEC representative)
- Gerd Materlik, Diamond Light Source
- Simon Mochrie, Yale University (absent from August 12-13, 2010 meeting)
- Harald Reichert, European Synchrotron Radiation Facility
- Janet Smith, University of Michigan
- Friso van der Veen, Swiss Light Source
- Pierre Wiltzius, University of California, Santa Barbara

2. Agenda of the 1st SAC Committee Meeting

First Light Source SAC Meeting

Date: August 12 – 13, 2010

Place: Brookhaven National Laboratory

PROGRAM

Thursday, August 12, 2010

08:00 - 09:00 Breakfast and Executive Session

09:00 - 09:45 Directorate Overview ..... S. Dierker

09:45 - 10:15 NSLS-II Accelerators: Design and Performance ..... E. Johnson

10:15 - 10:55 NSLS-II Exp. Facilities: Project Beamlines & R&D Program ..... Q. Shen

10:55 - 11:10 Break

11:10 - 11:50 NSLS Physical & Chemical Sciences User Program ..... R. Pindak

11:50 - 12:30 NSLS Life & Environmental Sciences User Program ..... L. Miller

12:30 - 01:30 Lunch

01:30 - 02:15 User Access Policy ..... Q. Shen

02:15 – 03:15 Beamline Development Proposal Summary ..... S. Dierker

03:15 – 03:30 Break and Group Photo

03:30 - 06:00 Committee Executive Session

06:30 Dinner

Friday, August 13, 2010

08:00 – 08:30 Breakfast

08:30 - 10:15 Committee Executive Session and Draft Report Writing

10:15 - 10:30 Break

10:30 - 12:00 Committee Executive Session and Draft Report Writing

12:00 – 01:00 Lunch

01:00 – 02:00 Closeout

02:00 Adjourn

3. List of Topics provided to SAC by LS Directorate Management for consideration

1. **Beamline Development Proposals**: Discuss and consider all of the BDPs and include the following in the SAC's written report:

a. A balanced overall assessment of the full set of 54 BDPs.

b. Recommendations on assignment of each BDP to one of the following four priority categories, along with justification from the SAC perspective:

Near-term priority

Mid-term priority

Far-term priority

Not recommended

In reaching conclusions on priority category assignment, the SAC may consider a variety of factors, including:

BDP reports by the Study Panels, including comments and scores

balance of techniques and science areas

overall user demand in a given area, including that from existing NSLS user programs or programs at other synchrotron facilities

c. Recommendations on modifications of BDPs, such as consolidation of BDPs or other adjustments

d. Recommendations on any substantial R&D efforts that may be desirable in connection with BDPs

2. **User Access Policy**: Discuss, consider, and comment on the draft user access policy, including any recommendations for revisions.

3. **Future Upgrades:** Comment on the potential for scientific impact of plans for future upgrades.